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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/520,043

09/02/2005

Eric Maziers

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EXAMINER

NICHOLS, CHRISTOPHER S

ART UNIT

PAPER NUMBER

1791

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/520,043	Applicant(s) MAZIER ET AL.	
	Examiner Christopher S. Nichols	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/31/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

**POLYMER PROCESSABILITY EVALUATION THROUGH ON-LINE IMAGE
PROCESSING**

Specification

1. The abstract of the disclosure does not commence on a separate sheet in accordance with 37 CFR 1.52(b)(4). A new abstract of the disclosure is required and must be presented on a separate sheet, apart from any other text.
2. The amendment filed 12/30/2004 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: the recitation “the vertically moving laser is sensed with a tolerance of 1 mm” in Claim 19 is not disclosed in the specification. On Page 6 Line 24-26 of the Specification, Applicant discloses that the accuracy may be adjusted “on the order of the mm.” However, it is the position of the examiner that “order of the mm” and “1 mm” does not encompass the same range. “Order of the mm” merely means that the accuracy may be measured in millimeters. If applicant believes the method of sensing the tolerance of the vertically moving laser is disclosed in the specification, it is requested that the applicant indicate the column and line, and/or figure with number, identifying the means for measuring the tolerance of the vertically moving laser.

Applicant is required to cancel the new matter in the reply to this Office Action.

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the

following is required: On Page 6 Line 18-22 of the Specification, Applicant discloses the flash duration is “preferably within the range of 1/9,100 to 1/28,000 second.” However, in Claim 20, Applicant claims that the range is no more than 1/9,100 of a second. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claim 19 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The recitation “the vertically moving laser is sensed with a tolerance of 1 mm” is not disclosed in the specification. If applicant believes the method of sensing the tolerance of the vertically moving laser is disclosed in the specification, it is requested that the applicant indicate the column and line, and/or figure with number, identifying the means for measuring the tolerance of the vertically moving laser.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 13-16, 18-19, 22-23, and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Feuerherm et al. (US 6,258,301), hereafter Feuerherm, in view of Nozu (JP 2001-124516) and Applicant's admitted prior art.

Regarding **Claim 13**, Feuerherm teaches a method for characterizing extrudate flowing under die tooling (see column 1 line 20-40). Feuerham teaches characterizing extrudate by measuring material parameters with a sensor system and comparing the measured parameters to a program curve (see column 5 line 55-67; see also column 6 line 1-4). The sensor system may include a signal generator and camera (see column 5 line 55-67; see also column 6 line 1-4). Measurements of material parameters may be done using transmitted radiation (see column 12 line 1-4), i.e. lasers. The program curve calculates both the sag and swell of the extrudate (see column 9 line 56-67; see also column 10 line 1-18). The sag and swell of the extrudate is dependent on the velocity of the material at the extrusion head (see column 3 line 1-48), i.e. the sag and swell of the extrudate is dependent on distance and time. In other words, the sag and swell of the extrudate may be measured and controlled by utilizing a sensor system that measures the position of the extrudate over time.

Feuerherm is silent regarding the sensor system comprising a laser system, a flash, and a CCD camera to measure extrudate position. Nozu teaches a measurement system that measures the displacement of a sample (see Abstract). The measurement system comprises a plurality of laser signals at a plurality of vertically displaced locations (see Fig. 2 at 2 and 3), a flash (see Fig. 2 at A and B), and CCD cameras (see Fig. 2 at 4 and 5). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the measurement system

taught by Nozu in the method by Feuerherm because Nozu teaches that such a measurement system measures the extension displacement of sample at a relatively low cost, and easily (see Abstract). Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the measurement system of Nozu in the method taught by Feuerherm because one of ordinary skill in the art would have been able to carry out such a substitution to achieve the predictable result of continuously determining the position of an extrudate. “The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *KSR Int’l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 82 USPQ2d 1385 (2007).

In addition, Applicant’s admitted prior art teaches that swell and sag may be separately computed by photographic methods (see Page 2 paragraph 2; see also (see Page 3 paragraph 3). Automating a manual activity such as calculating sag and swell from photographs using a computer as opposed to a person is prima facie obvious. *In re Venner*, 262 F.2d 91, 95, 120 USPQ 193, 194 (CCPA 1958)

Regarding **Claim 14**, Nozu teaches the laser signals are generated by laser (see Fig. 2 at 2), which is moved vertically as signals are generated (see Paragraph [0010]).

Regarding **Claims 15-16**, Nozu teaches the laser signals are sequentially generated by a plurality of vertically displaced lasers (see Fig. 2 at 4 and 5).

Regarding **Claims 18-19**, neither Feuerherm nor Nozu teach the claimed laser movement velocity. Nozu teaches that position correction of the lasers must be made so that specified points are always irradiated (see Paragraph [0010]). It is well known that velocity is a function of position and time, i.e. $u(x,t) = x/t$. In other words, the position correction of the lasers is

directly related to the displacement of the lasers, i.e. laser velocity. Therefore, it would have been within the ordinary skill of a person in the art at the time of the invention to optimize the laser velocity in the measurement process to ensure that the lasers always irradiate specified points. "Discovery of optimum value of result effective variable in known process is ordinarily within skill of art." *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding **Claim 22**, Feuerherm teaches that the program curve is adjusted by utilizing operating parameters such as temperature, die design, and shear rate (see column 2 line 27-67; see also column 3 line 1-48).

Regarding **Claim 23**, Feuerherm teaches the method relates to articles from a thermoplastic synthetic resin (see column 1 line 12-17).

Regarding **Claim 29**, Feuerherm discloses sag and swell of the extrudate is dependent on the velocity of the material at the extrusion head (see column 3 line 1-48), i.e. the sag and swell of the extrudate is dependent on distance and time. The velocity is directly related to other properties such as temperature, die design, and shear rate (see column 2 line 27-67; see also column 3 line 1-48). Feuerherm does not disclose determining melt fracture. Applicant's admitted prior art teaches that swelling and fracture of polyethylene melts are functions of shear rate and temperature (see Page 1 Paragraph 3). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to detect a known property such as fracture that is a function of data measured in the method by Feuerherm in view of Nozu because Applicant's admitted prior art teaches fracture is an important property to monitor for extruded films (see Page 1 Paragraph 3).

Regarding **Claim 30**, Feuerherm discloses sag and swell of the extrudate is dependent on the velocity of the material at the extrusion head (see column 3 line 1-48), i.e. the sag and swell of the extrudate is dependent on distance and time. The velocity is directly related to other properties such as temperature, die design, and shear rate (see column 2 line 27-67; see also column 3 line 1-48). Feuerherm does not disclose calculating the relaxation time. Applicant's admitted prior art teaches that relaxation data can be calculated from a photographic technique (see Page 2 paragraph 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to calculate the relaxation time of the extrudate from the images in the method by Feuerherm in view of Nozu because a person with ordinary skill has good reason to pursue a known option (calculating relaxation from images) within his or her technical grasp. "A person of ordinary skill has good reason to pursue the known option within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense." *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 82 USPQ2d 1385 (2007). Furthermore, automating a manual activity such as calculating relaxation from photographs using a computer as opposed to a person is prima facie obvious. *In re Venner*, 262 F.2d 91, 95, 120 USPQ 193, 194 (CCPA 1958)

8. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Feuerherm in view of Nozu and Applicant's admitted prior art as applied to claims 13-16, 18-19, 22-23, and 29-30 above, and further in view of White et al. (US 3,826,926), hereafter White.

Regarding **Claim 17**, Feuerherm in view of Nozu teach every claimed limitation except the CCD sensor comprising a two-phase charge-coupled sensor with a transparent electrode. White teaches a CCD sensor comprising a two-phase charge-coupled sensor with a transparent

electrode (see column 3 line 27-56). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the CCD sensor taught by White as the CCD in the method by Feuerherm in view of Nozu, because White teaches that such a sensor is preferably for the simplicity of the cell design, which allows sensor to sensor spacing to be compatible with high density requirements (see column 7 line 23-33).

9. Claims 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Feuerherm in view of Nozu and Applicant's admitted prior art as applied to claims 13-16, 18-19, 22-23, and 29-30 above, and further in view of Saito (JP 59-100670).

Regarding **Claims 20-21**, Feuerherm in view of Nozu teach every claimed limitation except the duration of the flash of not more than 1/9,100 second, preferably within the range of 1/9,100-1/28,000 second. Neither Feuerherm nor Nozu teach the criticality of the claimed flash times. Saito teaches that for an imaging device with a flash uses an exposure time shorter than frame period is required to ensure a clear still picture (see Title). Therefore, it would have been within the ordinary skill of a person in the art at the time of the invention to optimize the flash times in the imaging process to ensure a clear still picture. "Discovery of optimum value of result effective variable in known process is ordinarily within skill of art." *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

10. Claims 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Feuerherm in view of Nozu and Applicant's admitted prior art as applied to claims 13-16, 18-19, 22-23, and 29-30 above, and further in view of Austen et al. (US 4,341,827), hereafter Austen.

Regarding **Claims 24-26**, Feuerherm in view of Nozu teach every claimed limitation except the thermoplastic extrudate comprising polyethylene. Austen teaches that an extrusion and blow molding method where the extrudate is a thermoplastic resin comprising polyethylene (see column 10 line 15-23). A person of ordinary skill in the art, upon reading Austen, would have recognized that a thermoplastic resin comprising polyethylene is one of a finite number of thermoplastic resins known to be useful for extrusion. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to try the thermoplastic resin of Austen in the method by Feuerherm in view of Nozu because a person with ordinary skill has good reason to pursue a known option within his or her technical grasp. "A person of ordinary skill has good reason to pursue the known option within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense." *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 82 USPQ2d 1385 (2007).

11. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Feuerherm in view of Nozu and Applicant's admitted prior art as applied to claims 13-16, 18-19, 22-23, and 29-30 above, and further in view of Louis et al. (US 5,325,178), hereafter Louis.

Regarding **Claim 27**, Feuerherm in view of Nozu teach every claimed limitation except using a three camera to characterize extrudate in three dimensions. Louis teaches a CCD camera system for determining the dimensions of moving objects in three dimensions (see column 6 line 1-10; see also Fig. 3 at 10, 11, and 12). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the three CCD camera system of Louis in the method by Feuerherm in view of Nozu because one of ordinary skill in the art would have been able to carry out such a substitution to achieve the predictable result of measuring an object in

three dimensions. “The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *KSR Int’l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 82 USPQ2d 1385 (2007).

12. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Feuerherm in view of Nozu and Applicant’s admitted prior art as applied to claims 13-16, 18-19, 22-23, and 29-30 above, and further in view of Shimomura et al. (JP 10-300680), hereafter Shimomura.

Regarding **Claim 28**, Feuerherm in view of Nozu teach every claimed limitation except using a single camera to characterize extrudate in two dimensions. Shimomura teaches using a single CCD camera (see Fig. 3 at 13) to characterize a material in two dimensions (see Abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the single CCD camera system of Shimomura in the method by Feuerherm in view of Nozu because one of ordinary skill in the art would have been able to carry out such a substitution to achieve the predictable result of measuring an object in two dimensions. “The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *KSR Int’l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 82 USPQ2d 1385 (2007).

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher S. Nichols whose telephone number is (571) 270-3969. The examiner can normally be reached on Monday thru Thursday 7:30 AM to 5:00 PM EST. If attempts to reach the examiner by telephone are unsuccessful, the examiner’s

supervisor, Christina Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

**/Christopher S. Nichols/
Examiner, Art Unit 1791**

**/Richard Crispino/
Supervisory Patent Examiner, Art Unit 1791**